SEQUENCE LISTING

<110> Isfort, Robert
Sheldon, Russell

<120> Methods for Identifying Compounds for Regulating Muscle Mass or Function Using Vasoactive Intestinal Peptide Receptors

<130> 8311

<160> 16

<170> PatentIn version 3.0

<210> 1
<211> 457
<212> PRT
<213> homo sapiens;

<400> 1

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Met Arg Pro Pro Ser Pro Leu Pro Ala Arg Trp Leu Cys Val Leu Ala
1               5                  10                  15

Gly Ala Leu Ala Trp Ala Leu Gly Pro Ala Gly Gly Gln Ala Ala Arg
            20                  25                  30

Leu Gln Glu Glu Cys Asp Tyr Val Gln Met Ile Glu Val Gln His Lys
        35                  40                  45

Gln Cys Leu Glu Glu Ala Gln Leu Glu Asn Glu Thr Ile Gly Cys Ser
    50                  55                  60

Lys Met Trp Asp Asn Leu Thr Cys Trp Pro Ala Thr Pro Arg Gly Gln
65                  70                  75                  80

Val Val Val Leu Ala Cys Pro Leu Ile Phe Lys Leu Phe Ser Ser Ile
                85                  90                  95

Gln Gly Arg Asn Val Ser Arg Ser Cys Thr Asp Glu Gly Trp Thr His
            100                 105                 110

Leu Glu Pro Gly Pro Tyr Pro Ile Ala Cys Gly Leu Asp Asp Lys Ala
        115                 120                 125

Ala Ser Leu Asp Glu Gln Gln Thr Met Phe Tyr Gly Ser Val Lys Thr
    130                 135                 140

Gly Tyr Thr Ile Gly Tyr Gly Leu Ser Leu Ala Thr Leu Leu Val Ala
145                 150                 155                 160

Thr Ala Ile Leu Ser Leu Phe Arg Lys Leu His Cys Thr Arg Asn Tyr
                165                 170                 175

Ile His Met His Leu Phe Ile Ser Phe Ile Leu Arg Ala Ala Ala Val
            180                 185                 190
```

```
Phe Ile Lys Asp Leu Ala Leu Phe Asp Ser Gly Glu Ser Asp Gln Cys
        195                 200                 205

Ser Glu Gly Ser Val Gly Cys Lys Ala Ala Met Val Phe Phe Gln Tyr
    210                 215                 220

Cys Val Met Ala Asn Phe Phe Trp Leu Leu Val Glu Gly Leu Tyr Leu
225                 230                 235                 240

Tyr Thr Leu Leu Ala Val Ser Phe Phe Ser Glu Arg Lys Tyr Phe Trp
                245                 250                 255

Gly Tyr Ile Leu Ile Gly Trp Gly Val Pro Ser Thr Phe Thr Met Val
            260                 265                 270

Trp Thr Ile Ala Arg Ile His Phe Glu Asp Tyr Gly Cys Trp Asp Thr
        275                 280                 285

Ile Asn Ser Ser Leu Trp Trp Ile Ile Lys Gly Pro Ile Leu Thr Ser
    290                 295                 300

Ile Leu Val Asn Phe Ile Leu Phe Ile Cys Ile Ile Arg Ile Leu Leu
305                 310                 315                 320

Gln Lys Leu Arg Pro Pro Asp Ile Arg Lys Ser Asp Ser Ser Pro Tyr
                325                 330                 335

Ser Arg Leu Ala Arg Ser Thr Leu Leu Leu Ile Pro Leu Phe Gly Val
            340                 345                 350

His Tyr Ile Met Phe Ala Phe Phe Pro Asp Asn Phe Lys Pro Glu Val
        355                 360                 365

Lys Met Val Phe Glu Leu Val Val Gly Ser Phe Gln Gly Phe Val Val
    370                 375                 380

Ala Ile Leu Tyr Cys Phe Leu Asn Gly Glu Val Gln Ala Glu Leu Arg
385                 390                 395                 400

Arg Lys Trp Arg Arg Trp His Leu Gln Gly Val Leu Gly Trp Asn Pro
                405                 410                 415

Lys Tyr Arg His Pro Ser Gly Gly Ser Asn Gly Ala Thr Cys Ser Thr
            420                 425                 430

Gln Val Ser Met Leu Thr Arg Val Ser Pro Gly Ala Arg Arg Ser Ser
        435                 440                 445

Ser Phe Gln Ala Glu Val Ser Leu Val
    450                 455
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<210> 2
<211> 460
<212> PRT
<213> homo sapiens;

<400> 2

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Met Arg Pro Pro Ser Pro Leu Pro Ala Arg Trp Leu Cys Val Leu Ala
1               5                  10                  15

Gly Ala Leu Ala Trp Ala Leu Gly Pro Ala Gly Gly Gln Ala Ala Arg
            20                  25                  30

Leu Gln Glu Glu Cys Asp Tyr Val Gln Met Ile Glu Val Gln His Lys
        35                  40                  45

Gln Cys Leu Glu Glu Ala Gln Leu Glu Asn Glu Thr Ile Gly Cys Ser
    50                  55                  60

Lys Met Trp Asp Asn Leu Thr Cys Trp Pro Ala Thr Pro Arg Gly Gln
65                  70                  75                  80

Val Val Val Leu Ala Cys Pro Leu Ile Phe Lys Leu Phe Ser Ser Ile
                85                  90                  95

Gln Gly Arg Asn Val Ser Arg Ser Cys Thr Asp Glu Gly Trp Thr His
            100                 105                 110

Leu Glu Pro Gly Pro Tyr Pro Ile Ala Cys Gly Leu Asp Asp Lys Ala
        115                 120                 125

Ala Ser Leu Asp Glu Gln Gln Thr Met Phe Tyr Gly Ser Val Lys Thr
    130                 135                 140

Gly Tyr Thr Ile Gly Tyr Gly Leu Ser Leu Ala Thr Leu Leu Val Ala
145                 150                 155                 160

Thr Ala Ile Leu Ser Leu Phe Arg Lys Leu His Cys Thr Arg Asn Tyr
                165                 170                 175

Ile His Met His Leu Phe Ile Ser Phe Ile Leu Arg Ala Ala Ala Val
            180                 185                 190

Phe Ile Lys Asp Leu Ala Leu Phe Asp Ser Gly Glu Ser Asp Gln Cys
        195                 200                 205

Ser Glu Gly Ser Val Gly Cys Lys Ala Ala Met Val Phe Phe Gln Tyr
    210                 215                 220

Cys Val Met Ala Asn Phe Phe Trp Leu Leu Val Glu Gly Leu Tyr Leu
225                 230                 235                 240

Tyr Thr Leu Leu Ala Val Ser Phe Phe Ser Glu Arg Lys Tyr Phe Trp
                245                 250                 255

Gly Tyr Ile Leu Ile Gly Trp Gly Val Pro Ser Thr Phe Thr Met Val
            260                 265                 270

Trp Thr Ile Ala Arg Ile His Phe Glu Asp Tyr Gly Leu Leu Arg Cys
        275                 280                 285

Trp Asp Thr Ile Asn Ser Ser Leu Trp Trp Ile Ile Lys Gly Pro Ile
    290                 295                 300
```

```
Leu Thr Ser Ile Leu Val Asn Phe Ile Leu Phe Ile Cys Ile Ile Arg
305                 310                 315                 320

Ile Leu Leu Gln Lys Leu Arg Pro Pro Asp Ile Arg Lys Ser Asp Ser
                325                 330                 335

Ser Pro Tyr Ser Arg Leu Ala Arg Ser Thr Leu Leu Leu Ile Pro Leu
            340                 345                 350

Phe Gly Val His Tyr Ile Met Phe Ala Phe Phe Pro Asp Asn Phe Lys
        355                 360                 365

Pro Glu Val Lys Met Val Phe Glu Leu Val Val Gly Ser Phe Gln Gly
    370                 375                 380

Phe Val Val Ala Ile Leu Tyr Cys Phe Leu Asn Gly Glu Val Gln Ala
385                 390                 395                 400

Glu Leu Arg Arg Lys Trp Arg Arg Trp His Leu Gln Gly Val Leu Gly
                405                 410                 415

Trp Asn Pro Lys Tyr Arg His Pro Ser Gly Gly Ser Asn Gly Ala Thr
            420                 425                 430

Cys Ser Thr Gln Val Ser Met Leu Thr Arg Val Ser Pro Gly Ala Arg
        435                 440                 445

Arg Ser Ser Ser Phe Gln Ala Glu Val Ser Leu Val
    450                 455                 460
```

<210> 3
<211> 459
<212> PRT
<213> rattus norvegicus;

<400> 3

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Met Arg Pro Pro Ser Pro Pro His Val Arg Trp Leu Cys Val Leu Ala
1               5                   10                  15

Gly Ala Leu Ala Cys Ala Leu Arg Pro Ala Gly Ser Gln Ala Ala Ser
            20                  25                  30

Pro Gln His Glu Cys Glu Tyr Leu Gln Leu Ile Glu Ile Gln Arg Gln
        35                  40                  45

Gln Cys Leu Glu Glu Ala Gln Leu Glu Asn Glu Thr Thr Gly Cys Ser
    50                  55                  60

Lys Met Trp Asp Asn Leu Thr Cys Trp Pro Thr Thr Pro Arg Gly Gln
65                  70                  75                  80

Ala Val Val Leu Asp Cys Pro Leu Ile Phe Gln Leu Phe Ala Pro Ile
                85                  90                  95

His Gly Tyr Asn Ile Ser Arg Ser Cys Thr Glu Glu Gly Trp Ser Gln
```

```
            100                 105                 110

Leu Glu Pro Gly Pro Tyr His Ile Ala Cys Gly Leu Asn Asp Arg Ala
        115                 120                 125

Ser Ser Leu Asp Glu Gln Gln Gln Thr Lys Phe Tyr Asn Thr Val Lys
    130                 135                 140

Thr Gly Tyr Thr Ile Gly Tyr Ser Leu Ser Leu Ala Ser Leu Leu Val
145                 150                 155                 160

Ala Met Ala Ile Leu Ser Leu Phe Arg Lys Leu His Cys Thr Arg Asn
                165                 170                 175

Tyr Ile His Met His Leu Phe Met Ser Phe Ile Leu Arg Ala Thr Ala
            180                 185                 190

Val Phe Ile Lys Asp Met Ala Leu Phe Asn Ser Gly Glu Ile Asp His
        195                 200                 205

Cys Ser Glu Ala Ser Val Gly Cys Lys Ala Ala Val Val Phe Phe Gln
    210                 215                 220

Tyr Cys Val Met Ala Asn Phe Phe Trp Leu Leu Val Glu Gly Leu Tyr
225                 230                 235                 240

Leu Tyr Thr Leu Leu Ala Val Ser Phe Phe Ser Glu Arg Lys Tyr Phe
                245                 250                 255

Trp Gly Tyr Ile Leu Ile Gly Trp Gly Val Pro Ser Val Phe Ile Thr
            260                 265                 270

Ile Trp Thr Val Val Arg Ile Tyr Phe Glu Asp Phe Gly Cys Trp Asp
        275                 280                 285

Thr Ile Ile Asn Ser Ser Leu Trp Trp Ile Ile Lys Ala Pro Ile Leu
    290                 295                 300

Leu Ser Ile Leu Val Asn Phe Val Leu Phe Ile Cys Ile Ile Arg Ile
305                 310                 315                 320

Leu Val Gln Lys Leu Arg Pro Pro Asp Ile Gly Lys Asn Asp Ser Ser
                325                 330                 335

Pro Tyr Ser Arg Leu Ala Lys Ser Thr Leu Leu Leu Ile Pro Leu Phe
            340                 345                 350

Gly Ile His Tyr Val Met Phe Ala Phe Phe Pro Asp Asn Phe Lys Ala
        355                 360                 365

Gln Val Lys Met Val Phe Glu Leu Val Val Gly Ser Phe Gln Gly Phe
    370                 375                 380

Val Val Ala Ile Leu Tyr Cys Phe Leu Asn Gly Glu Val Gln Ala Glu
385                 390                 395                 400

Leu Arg Arg Lys Trp Arg Arg Trp His Leu Gln Gly Val Leu Gly Trp
```

```
                405                 410                 415

Ser Ser Lys Ser Gln His Pro Trp Gly Gly Ser Asn Gly Ala Thr Cys
            420                 425                 430

Ser Thr Gln Val Ser Met Leu Thr Arg Val Ser Pro Ser Ala Arg Arg
        435                 440                 445

Ser Ser Ser Phe Gln Ala Glu Val Ser Leu Val
    450                 455
```

<210> 4
<211> 459
<212> PRT
<213> mus musculus;

<400> 4

```
Met Arg Pro Pro Ser Leu Pro Pro Ala Arg Trp Leu Cys Val Leu Ala
1               5                   10                  15

Gly Ala Leu Ala Cys Ala Leu Gly Pro Ala Gly Ser Arg Ala Ala Ser
            20                  25                  30

Pro His Gln Glu Cys Glu Tyr Leu Gln Met Ile Glu Lys Gln Arg Gln
        35                  40                  45

Gln Cys Leu Glu Glu Ala Gln Leu Glu Asn Lys Thr Thr Gly Cys Ser
    50                  55                  60

Lys Met Trp Asp Asn Leu Thr Cys Trp Pro Thr Thr Pro Trp Gly Gln
65                  70                  75                  80

Val Val Val Leu Asp Cys Pro Leu Ile Phe Gln Leu Phe Ser Pro Ile
                85                  90                  95

His Gly Tyr Asn Ile Ser Arg Asn Cys Thr Glu Glu Gly Trp Ser Gln
            100                 105                 110

Leu Glu Pro Gly Pro Tyr His Ile Ala Cys Gly Leu Asn Asp Arg Ala
        115                 120                 125

Ser Ser Met Asp Glu Gln Gln Gln Thr Glu Phe Tyr Asp Ala Val Lys
    130                 135                 140

Thr Gly Tyr Thr Ile Gly Tyr Ser Leu Ser Leu Ala Ser Leu Leu Val
145                 150                 155                 160

Ala Met Ala Ile Leu Ser Leu Phe Arg Lys Leu His Cys Thr Arg Asn
                165                 170                 175

Tyr Ile His Met His Leu Phe Met Ser Phe Ile Leu Arg Ala Thr Ala
            180                 185                 190

Val Phe Ile Lys Asp Met Ala Leu Phe Asn Asn Gly Glu Thr Asp His
        195                 200                 205
```

```
Cys Ser Glu Ala Ser Val Ser Cys Lys Ala Ala Val Val Phe Phe Gln
    210                 215                 220

Tyr Cys Val Met Ala Asn Phe Phe Trp Leu Leu Val Glu Gly Leu Tyr
225                 230                 235                 240

Leu His Thr Leu Leu Ala Val Ser Phe Phe Ser Glu Arg Lys Tyr Phe
                245                 250                 255

Trp Gly Tyr Ile Leu Ile Gly Trp Gly Val Pro Ser Val Phe Ile Met
            260                 265                 270

Ile Trp Thr Ile Val Arg Ile His Phe Glu Asp Phe Gly Cys Trp Asp
        275                 280                 285

Thr Ile Ile Asn Ser Ser Leu Trp Trp Ile Ile Lys Gly Pro Ile Leu
    290                 295                 300

Ile Ser Ile Leu Val Asn Phe Ile Leu Phe Ile Cys Ile Ile Arg Ile
305                 310                 315                 320

Leu Val Gln Lys Leu Arg Pro Pro Asp Ile Gly Lys Asn Asp Ser Ser
                325                 330                 335

Pro Tyr Ser Arg Leu Ala Lys Ser Thr Leu Leu Leu Ile Pro Leu Phe
            340                 345                 350

Gly Val His Tyr Val Met Phe Ala Phe Phe Pro Asp Asn Phe Lys Ala
        355                 360                 365

Gln Val Lys Met Val Phe Glu Leu Val Val Gly Ser Phe Gln Gly Phe
    370                 375                 380

Val Val Ala Ile Leu Tyr Cys Phe Leu Asn Gly Glu Val Gln Ala Glu
385                 390                 395                 400

Leu Arg Arg Lys Trp Arg Arg Trp His Leu Gln Gly Val Leu Gly Trp
                405                 410                 415

Ser Ser Lys Ser Gln His Pro Trp Gly Gly Ser Asn Gly Val Ser Cys
            420                 425                 430

Ser Thr Gln Val Ser Met Leu Thr Arg Val Ser Pro Ser Ala Arg Arg
        435                 440                 445

Ser Ser Ser Phe Gln Ala Glu Val Ser Leu Val
    450                 455

<210>  5
<211>  458
<212>  PRT
<213>  sus scrofa;

<400>  5

Met Arg Pro Leu Ser Pro Pro Pro Ala Gly Trp Phe Cys Val Leu Ala
1               5                   10                  15
```

Gly Val Leu Ala Cys Val Leu Gly Pro Val Gly Ser Trp Ala Val Gly
20 25 30

Leu Gln Gln Glu Glu Cys Asp Tyr Leu Gln Met Ile Lys Val Gln His
35 40 45

Lys Gln Cys Leu Glu Glu Ala Gln Leu Glu Asn Glu Thr Ser Gly Cys
50 55 60

Ser Lys Met Trp Asp Asn Leu Thr Cys Trp Pro Ala Thr Pro Arg Gly
65 70 75 80

Gln Val Val Val Leu Ala Cys Pro Leu Ile Phe Lys Leu Phe Ser Pro
85 90 95

Thr Gln Gly Leu Asn Val Ser Arg Asn Cys Thr Asp Glu Gly Trp Thr
100 105 110

Pro Leu Glu Pro Gly Pro Tyr Pro Ile Ala Cys Gly Met Asp Asp Lys
115 120 125

Ala Ser Gly Leu Asp Glu Gln Gln Thr Val Phe Tyr Asn Ser Val Lys
130 135 140

Thr Gly Tyr Thr Ile Gly Tyr Ser Leu Ser Leu Ala Ala Leu Leu Val
145 150 155 160

Ala Thr Ala Ile Leu Ser Leu Phe Arg Lys Leu His Cys Thr Arg Asn
165 170 175

Tyr Ile His Met His Leu Phe Ile Ser Phe Ile Leu Arg Ala Thr Ala
180 185 190

Val Phe Ile Lys Asp Leu Ala Leu Phe Asp Ser Glu Glu Ser Asp His
195 200 205

Cys Ser Lys Gly Ser Val Gly Cys Lys Ala Ala Val Val Leu Phe Gln
210 215 220

Tyr Cys Val Met Ala Asn Phe Phe Trp Leu Leu Val Glu Gly Leu Tyr
225 230 235 240

Leu His Thr Leu Leu Ala Val Ser Phe Phe Ser Glu Arg Lys Tyr Phe
245 250 255

Trp Gly Tyr Ile Phe Val Gly Trp Gly Val Pro Ser Thr Phe Ile Met
260 265 270

Val Trp Thr Val Val Arg Ile His Phe Glu Asp Tyr Gly Cys Trp Asp
275 280 285

Thr Ile His Ser Ser Leu Trp Trp Ile Ile Lys Ala Pro Ile Leu Ala
290 295 300

Ser Ile Leu Val Asn Phe Ile Leu Phe Ile Arg Ile Ile Gly Ile Leu
305 310 315 320

```
Val Gln Lys Leu Arg Pro Pro Asp Val Gly Lys Ser Asp Asn Ser Pro
                325                 330                 335

Tyr Ser Arg Leu Ala Lys Ser Thr Leu Leu Leu Ile Pro Leu Phe Gly
            340                 345                 350

Val His Tyr Ile Met Phe Ala Phe Phe Pro Asp Asn Phe Lys Ala Glu
        355                 360                 365

Val Lys Met Val Phe Glu Leu Ile Val Gly Ser Phe Gln Gly Cys Val
    370                 375                 380

Val Ala Ile Leu Tyr Cys Phe Leu Asn Gly Glu Val Gln Ala Glu Leu
385                 390                 395                 400

Arg Arg Lys Trp Arg Arg Trp His Gln Gln Gly Val Leu Gly Trp Asp
                405                 410                 415

Ser Lys Tyr Gln His Pro Ser Gly Gly Ser Asn Gly Asp Thr Cys Ser
            420                 425                 430

Thr Gln Val Ser Met Leu Thr Arg Val Ser Pro Ser Ala Arg Arg Ser
        435                 440                 445

Ser Ser Phe Gln Ala Glu Val Ser Leu Val
    450                 455
```

<210> 6
<211> 444
<212> PRT
<213> rana ridibunda;

<400> 6

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Met Glu Phe Leu Pro Leu Leu Leu Cys Leu Thr Gly Leu Phe Ser Pro
1               5                   10                  15

Ile Leu Cys Val Pro Glu Glu Cys Ser Ile Met Tyr Gln Ile Glu Leu
            20                  25                  30

Lys His Glu Glu Cys Val Asn His Glu Asp Tyr Phe Asn Asp Thr Ala
        35                  40                  45

Val Cys Lys Arg Thr Trp Asp Asn Ile Thr Cys Trp Pro Ser Ala Ser
    50                  55                  60

Ile Gly Glu Val Val Val Leu Gln Cys Pro Gly Tyr Phe Ser Met Phe
65                  70                  75                  80

Thr Thr Gly Thr Val Asn Gly Asn Val Ser Lys Asn Cys Thr Ser Glu
                85                  90                  95

Gly Trp Ser Glu Met Tyr Pro Ala Thr Tyr Ala Ala Ala Cys Gly Phe
            100                 105                 110

Ser Thr Asn Asp Thr Pro Thr Glu Gln Gln Thr Val Phe Phe Gly Ala
```

```
        115                 120                 125

Ile Lys Thr Gly Tyr Thr Ile Gly His Ser Leu Ser Leu Ile Ser Leu
    130                 135                 140

Thr Ala Ala Met Ile Ile Leu Cys Ile Phe Arg Lys Leu His Cys Thr
145                 150                 155                 160

Arg Asn Tyr Ile His Met His Leu Phe Met Ser Phe Ile Met Arg Ala
                165                 170                 175

Ile Ala Val Phe Ile Lys Asp Ile Val Leu Phe Glu Ser Gly Glu Ser
            180                 185                 190

Asp His Cys His Val Gly Ser Val Gly Cys Lys Ala Ala Met Val Phe
        195                 200                 205

Phe Gln Tyr Cys Ile Met Ala Asn Phe Phe Trp Leu Leu Val Glu Gly
    210                 215                 220

Leu Tyr Leu His Asn Leu Leu Val Ile Ser Phe Phe Ser Glu Lys Lys
225                 230                 235                 240

Tyr Phe Trp Trp Tyr Ile Leu Ile Gly Trp Gly Ala Pro Ser Val Phe
                245                 250                 255

Ile Thr Ala Trp Ser Leu Ala Arg Val Tyr Phe Glu Asp Thr Gly Cys
            260                 265                 270

Trp Asp Thr Ile Glu Ser His Leu Trp Trp Ile Ile Lys Thr Pro Ile
        275                 280                 285

Leu Val Ser Ile Leu Val Asn Phe Ile Leu Phe Ile Cys Ile Ile Arg
    290                 295                 300

Ile Leu Val Gln Lys Leu His Ser Pro Asp Val Gly Arg Asn Glu Asn
305                 310                 315                 320

Ser Gln Tyr Thr Arg Leu Ala Lys Ser Thr Leu Leu Leu Ile Pro Leu
                325                 330                 335

Phe Gly Val His Tyr Ile Met Phe Ala Phe Phe Pro Asp Asn Phe Lys
            340                 345                 350

Val Glu Val Lys Leu Val Phe Glu Leu Ile Leu Gly Ser Phe Gln Gly
        355                 360                 365

Phe Val Val Ala Val Leu Tyr Cys Phe Leu Asn Gly Glu Val Gln Ala
    370                 375                 380

Glu Leu Lys Arg Lys Trp Arg Arg Trp Asn Leu Glu Arg Phe Met Gly
385                 390                 395                 400

Lys Asp Met Lys Tyr His His Pro Ser Leu Gly Ser Asn Gly Thr Asn
                405                 410                 415

Phe Ser Thr Gln Ile Ser Met Leu Thr Lys Cys Ser Pro Lys Thr Arg
```

```
            420                 425                 430

Arg Cys Ser Ser Phe Gln Ala Glu Phe Ser Leu Val
        435                 440
```

<210> 7
<211> 458
<212> PRT
<213> porcine;

<400> 7

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Met Arg Pro Leu Ser Pro Pro Pro Ala Gly Trp Phe Cys Val Leu Ala
1               5                   10                  15

Gly Val Leu Ala Cys Val Leu Gly Pro Val Gly Ser Trp Ala Val Gly
            20                  25                  30

Leu Gln Gln Glu Glu Cys Asp Tyr Leu Gln Met Ile Lys Val Gln His
        35                  40                  45

Lys Gln Cys Leu Glu Glu Ala Gln Leu Glu Asn Glu Thr Ser Gly Cys
    50                  55                  60

Ser Lys Met Trp Asp Asn Leu Thr Cys Trp Pro Ala Thr Pro Arg Gly
65                  70                  75                  80

Gln Val Val Val Leu Ala Cys Pro Leu Ile Phe Lys Leu Phe Ser Pro
                85                  90                  95

Thr Gln Gly Leu Asn Val Ser Arg Asn Cys Thr Asp Glu Gly Trp Thr
            100                 105                 110

Pro Leu Glu Pro Gly Pro Tyr Pro Ile Ala Cys Gly Met Asp Asp Lys
        115                 120                 125

Ala Ser Gly Leu Asp Glu Gln Gln Thr Val Phe Tyr Asn Ser Val Lys
    130                 135                 140

Thr Gly Tyr Thr Ile Gly Tyr Ser Leu Ser Leu Ala Ala Leu Leu Val
145                 150                 155                 160

Ala Thr Ala Ile Leu Ser Leu Phe Arg Lys Leu His Cys Thr Arg Asn
                165                 170                 175

Tyr Ile His Met His Leu Phe Ile Ser Phe Ile Leu Arg Ala Thr Ala
            180                 185                 190

Val Phe Ile Lys Asp Leu Ala Leu Phe Asp Ser Glu Glu Ser Asp His
        195                 200                 205

Cys Ser Lys Gly Ser Val Gly Cys Lys Ala Ala Val Val Leu Phe Gln
    210                 215                 220

Tyr Cys Val Met Ala Asn Phe Phe Trp Leu Leu Val Glu Gly Leu Tyr
225                 230                 235                 240
```

```
Leu His Thr Leu Leu Ala Val Ser Phe Phe Ser Glu Arg Lys Tyr Phe
                245                 250                 255

Trp Gly Tyr Ile Phe Val Gly Trp Gly Val Pro Ser Thr Phe Ile Met
            260                 265                 270

Val Trp Thr Val Val Arg Ile His Phe Glu Asp Tyr Gly Cys Trp Asp
        275                 280                 285

Thr Ile His Ser Ser Leu Trp Trp Ile Ile Lys Ala Pro Ile Leu Ala
    290                 295                 300

Ser Ile Leu Val Asn Phe Ile Leu Phe Ile Arg Ile Ile Gly Ile Leu
305                 310                 315                 320

Val Gln Lys Leu Arg Pro Pro Asp Val Gly Lys Ser Asp Asn Ser Pro
                325                 330                 335

Tyr Ser Arg Leu Ala Lys Ser Thr Leu Leu Leu Ile Pro Leu Phe Gly
            340                 345                 350

Val His Tyr Ile Met Phe Ala Phe Phe Pro Asp Asn Phe Lys Ala Glu
        355                 360                 365

Val Lys Met Val Phe Glu Leu Ile Val Gly Ser Phe Gln Gly Cys Val
    370                 375                 380

Val Ala Ile Leu Tyr Cys Phe Leu Asn Gly Glu Val Gln Ala Glu Leu
385                 390                 395                 400

Arg Arg Lys Trp Arg Arg Trp His Gln Gln Gly Val Leu Gly Trp Asp
                405                 410                 415

Ser Lys Tyr Gln His Pro Ser Gly Gly Ser Asn Gly Asp Thr Cys Ser
            420                 425                 430

Thr Gln Val Ser Met Leu Thr Arg Val Ser Pro Ser Ala Arg Arg Ser
        435                 440                 445

Ser Ser Phe Gln Ala Glu Val Ser Leu Val
    450                 455
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<210> 8
<211> 459
<212> PRT
<213> rattus sp;

<400> 8

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Met Arg Pro Pro Ser Pro Pro His Val Arg Trp Leu Cys Val Leu Ala
1               5                   10                  15

Gly Ala Leu Ala Cys Ala Leu Arg Pro Ala Gly Ser Gln Ala Ala Ser
            20                  25                  30

Pro Gln His Glu Cys Glu Tyr Leu Gln Leu Ile Glu Ile Gln Arg Gln
        35                  40                  45
```

Gln Cys Leu Glu Glu Ala Gln Leu Glu Asn Glu Thr Thr Gly Cys Ser
50 55 60

Lys Met Trp Asp Asn Leu Thr Cys Trp Pro Thr Thr Pro Arg Gly Gln
65 70 75 80

Ala Val Val Leu Asp Cys Pro Leu Ile Phe Gln Leu Phe Ala Pro Ile
85 90 95

His Gly Tyr Asn Ile Ser Arg Ser Cys Thr Glu Glu Gly Trp Ser Gln
100 105 110

Leu Glu Pro Gly Pro Tyr His Ile Ala Cys Gly Leu Asn Asp Arg Ala
115 120 125

Ser Ser Leu Asp Glu Gln Gln Gln Thr Lys Phe Tyr Asn Thr Val Lys
130 135 140

Thr Gly Tyr Thr Ile Gly Tyr Ser Leu Ser Leu Ala Ser Leu Leu Val
145 150 155 160

Ala Met Ala Ile Leu Ser Leu Phe Arg Lys Leu His Cys Thr Arg Asn
165 170 175

Tyr Ile His Met His Leu Phe Met Ser Phe Ile Leu Arg Ala Thr Ala
180 185 190

Val Phe Ile Lys Asp Met Ala Leu Phe Asn Ser Gly Glu Ile Asp His
195 200 205

Cys Ser Glu Ala Ser Val Gly Cys Lys Ala Ala Val Val Phe Phe Gln
210 215 220

Tyr Cys Val Met Ala Asn Phe Phe Trp Leu Leu Val Glu Gly Leu Tyr
225 230 235 240

Leu Tyr Thr Leu Leu Ala Val Ser Phe Phe Ser Glu Arg Lys Tyr Phe
245 250 255

Trp Gly Tyr Ile Leu Ile Gly Trp Gly Val Pro Ser Val Phe Ile Thr
260 265 270

Ile Trp Thr Val Val Arg Ile Tyr Phe Glu Asp Phe Gly Cys Trp Asp
275 280 285

Thr Ile Ile Asn Ser Ser Leu Trp Trp Ile Ile Lys Ala Pro Ile Leu
290 295 300

Leu Ser Ile Leu Val Asn Phe Val Leu Phe Ile Cys Ile Ile Arg Ile
305 310 315 320

Leu Val Gln Lys Leu Arg Pro Pro Asp Ile Gly Lys Asn Asp Ser Ser
325 330 335

Pro Tyr Ser Arg Leu Ala Lys Ser Thr Leu Leu Leu Ile Pro Leu Phe
340 345 350

Gly Ile His Tyr Val Met Phe Ala Phe Phe Pro Asp Asn Phe Lys Ala
355 360 365

Gln Val Lys Met Val Phe Glu Leu Val Val Gly Ser Phe Gln Gly Phe
370 375 380

Val Val Ala Ile Leu Tyr Cys Phe Leu Asn Gly Glu Val Gln Ala Glu
385 390 395 400

Leu Arg Arg Lys Trp Arg Arg Trp His Leu Gln Gly Val Leu Gly Trp
405 410 415

Ser Ser Lys Ser Gln His Pro Trp Gly Gly Ser Asn Gly Ala Thr Cys
420 425 430

Ser Thr Gln Val Ser Met Leu Thr Arg Val Ser Pro Ser Ala Arg Arg
435 440 445

Ser Ser Ser Phe Gln Ala Glu Val Ser Leu Val
450 455

<210> 9
<211> 447
<212> PRT
<213> Carassius auratus;

<400> 9

Met Cys Asp Val Val Asn Glu Ile Glu Leu Ala Arg Ala Arg Cys Glu
1 5 10 15

Asn Lys Thr Ala Gly Asn Val Thr Ser Gly Cys Lys Gly Met Trp Asp
20 25 30

Ile Ile Ala Cys Trp Pro Ser Ala Lys Val Gly Glu His Val Val Ile
35 40 45

Pro Cys Pro Asn Tyr Phe Arg His Phe Ser Asp His His Glu Gly Asn
50 55 60

Leu Ser Lys Thr Cys Thr Ala Asp Gly Trp Thr Glu Met Asp Pro Met
65 70 75 80

Glu Ile Ala Val Tyr Cys Gly Tyr Asn Leu Asn Gly Thr Val Asp Asp
85 90 95

Asp Ser Phe Phe Arg Ser Val Lys Ile Gly Tyr Thr Ile Gly His Ser
100 105 110

Val Ser Leu Ile Ser Leu Thr Thr Ala Ile Val Ile Leu Cys Met Ser
115 120 125

Arg Lys Leu His Cys Thr Arg Asn Tyr Ile His Met His Leu Phe Val
130 135 140

Ser Phe Ile Leu Lys Ala Ile Ala Val Phe Val Lys Asp Ala Val Leu

```
145                 150                 155                 160

Tyr Asp Val Ile Gln Glu Ser Asp Asn Cys Ser Thr Ala Ser Val Gly
                165                 170                 175

Cys Lys Ala Val Ile Val Phe Phe Gln Tyr Cys Ile Met Ala Ser Phe
            180                 185                 190

Phe Trp Leu Leu Val Glu Gly Leu Tyr Leu His Ala Leu Leu Ala Val
        195                 200                 205

Ser Phe Phe Ser Glu Arg Lys Tyr Phe Trp Trp Tyr Ile Leu Ile Gly
    210                 215                 220

Trp Gly Gly Pro Thr Ile Phe Ile Met Ala Trp Ser Phe Ala Lys Ala
225                 230                 235                 240

Tyr Phe Asn Asp Val Gly Cys Trp Asp Ile Ile Glu Asn Ser Asp Leu
                245                 250                 255

Phe Trp Trp Ile Ile Lys Thr Pro Ile Leu Ala Ser Ile Leu Met Asn
            260                 265                 270

Phe Ile Leu Phe Ile Cys Ile Ile Arg Ile Leu Arg Gln Lys Ile Asn
        275                 280                 285

Cys Pro Asp Ile Gly Arg Asn Glu Ser Asn Gln Tyr Ser Arg Leu Ala
    290                 295                 300

Lys Ser Thr Leu Leu Leu Ile Pro Leu Phe Gly Ile Asn Phe Ile Ile
305                 310                 315                 320

Phe Ala Phe Ile Pro Glu Asn Ile Lys Thr Glu Leu Arg Leu Val Phe
                325                 330                 335

Asp Leu Ile Leu Gly Ser Phe Gln Gly Phe Val Val Ala Val Leu Tyr
            340                 345                 350

Cys Phe Leu Asn Gly Glu Val Gln Ala Glu Ile Lys Arg Lys Trp Arg
        355                 360                 365

Arg Trp His Leu Glu Arg Phe Leu Gly Pro Asp Thr Lys Tyr Gln His
    370                 375                 380

Pro Ser Met Gly Ser Asn Gly Asn Asn Phe Ser Thr Gln Ile Ser Met
385                 390                 395                 400

Leu Thr Arg Cys Ser Pro Lys Thr Arg Arg Ala Ser Thr Cys Gln Asp
                405                 410                 415

Glu Thr Ser Ile Thr Val Leu Gly Ser Thr Thr Met Gly Tyr Gly His
            420                 425                 430

Gln Asn Glu Thr Val Lys Gly His Glu Asp Val Arg Glu Val Ser
        435                 440                 445
```

<210> 10

<211> 438
<212> PRT
<213> homo sapiens;

<400> 10

```
Met Arg Thr Leu Leu Pro Pro Ala Leu Leu Thr Cys Trp Leu Leu Ala
1               5                  10                  15

Pro Val Asn Ser Ile His Pro Glu Cys Arg Phe His Leu Glu Ile Gln
            20                  25                  30

Glu Glu Glu Thr Lys Cys Ala Glu Leu Leu Arg Ser Gln Thr Glu Lys
        35                  40                  45

His Lys Ala Cys Ser Gly Val Trp Asp Asn Ile Thr Cys Trp Arg Pro
    50                  55                  60

Ala Asn Val Gly Glu Thr Val Thr Val Pro Cys Pro Lys Val Phe Ser
65                  70                  75                  80

Asn Phe Tyr Ser Lys Ala Gly Asn Ile Ser Lys Asn Cys Thr Ser Asp
                85                  90                  95

Gly Trp Ser Glu Thr Phe Pro Asp Phe Val Asp Ala Cys Gly Tyr Ser
            100                 105                 110

Asp Pro Glu Asp Glu Ser Lys Ile Thr Phe Tyr Ile Leu Val Lys Ala
        115                 120                 125

Ile Tyr Thr Leu Gly Tyr Ser Val Ser Leu Met Ser Leu Ala Thr Gly
    130                 135                 140

Ser Ile Ile Leu Cys Leu Phe Arg Lys Leu His Cys Thr Arg Asn Tyr
145                 150                 155                 160

Ile His Leu Asn Leu Phe Leu Ser Phe Ile Leu Arg Ala Ile Ser Val
                165                 170                 175

Leu Val Lys Asp Asp Val Leu Tyr Ser Ser Ser Gly Thr Leu His Cys
            180                 185                 190

Pro Asp Gln Pro Ser Ser Trp Val Gly Cys Lys Leu Ser Leu Val Phe
        195                 200                 205

Leu Gln Tyr Cys Ile Met Ala Asn Phe Phe Trp Leu Leu Val Glu Gly
    210                 215                 220

Leu Tyr Leu His Thr Leu Leu Val Ala Met Leu Pro Pro Arg Arg Cys
225                 230                 235                 240

Phe Leu Ala Tyr Leu Leu Ile Gly Trp Gly Leu Pro Thr Val Cys Ile
                245                 250                 255

Gly Ala Trp Thr Ala Ala Arg Leu Tyr Leu Glu Asp Thr Gly Cys Trp
            260                 265                 270
```

```
Asp Thr Asn Asp His Ser Val Pro Trp Trp Val Ile Arg Ile Pro Ile
        275                 280                 285

Leu Ile Ser Ile Ile Val Asn Phe Val Leu Phe Ile Ser Ile Ile Arg
    290                 295                 300

Ile Leu Leu Gln Lys Leu Thr Ser Pro Asp Val Gly Gly Asn Asp Gln
305                 310                 315                 320

Ser Gln Tyr Lys Arg Leu Ala Lys Ser Thr Leu Leu Leu Ile Pro Leu
                325                 330                 335

Phe Gly Val His Tyr Met Val Phe Ala Val Phe Pro Ile Ser Ile Ser
            340                 345                 350

Ser Lys Tyr Gln Ile Leu Phe Glu Leu Cys Leu Gly Ser Phe Gln Gly
        355                 360                 365

Leu Val Val Ala Val Leu Tyr Cys Phe Leu Asn Ser Glu Val Gln Cys
    370                 375                 380

Glu Leu Lys Arg Lys Trp Arg Ser Arg Cys Pro Thr Pro Ser Ala Ser
385                 390                 395                 400

Arg Asp Tyr Arg Val Cys Gly Ser Ser Phe Ser Arg Asn Gly Ser Glu
                405                 410                 415

Gly Ala Leu Gln Phe His Arg Gly Ser Arg Ala Gln Ser Phe Leu Gln
            420                 425                 430

Thr Glu Thr Ser Val Ile
        435

<210>  11
<211>  438
<212>  PRT
<213>  homo sapiens;

<400>  11

Met Arg Thr Leu Leu Pro Pro Ala Leu Leu Thr Cys Trp Leu Leu Ala
1               5                   10                  15

Pro Val Asn Ser Ile His Pro Glu Cys Arg Phe His Leu Glu Ile Gln
            20                  25                  30

Glu Glu Glu Thr Lys Cys Thr Glu Leu Leu Arg Ser Gln Thr Glu Lys
        35                  40                  45

His Lys Ala Cys Ser Gly Val Trp Asp Asn Ile Thr Cys Trp Arg Pro
    50                  55                  60

Ala Asn Val Gly Glu Thr Val Thr Val Pro Cys Pro Lys Val Phe Ser
65                  70                  75                  80

Asn Phe Tyr Ser Lys Ala Gly Asn Ile Ser Lys Asn Cys Thr Ser Asp
                85                  90                  95
```

Gly Trp Ser Glu Thr Phe Pro Asp Phe Val Asp Ala Cys Gly Tyr Ser
100 105 110

Asp Pro Glu Asp Glu Ser Lys Ile Thr Phe Tyr Ile Leu Val Lys Ala
115 120 125

Ile Tyr Thr Leu Gly Tyr Ser Val Ser Leu Met Ser Leu Ala Thr Gly
130 135 140

Ser Ile Ile Leu Cys Leu Phe Arg Lys Leu His Cys Thr Arg Asn Tyr
145 150 155 160

Ile His Leu Asn Leu Phe Leu Ser Phe Ile Leu Arg Ala Ile Ser Val
165 170 175

Leu Val Lys Asp Asp Val Leu Tyr Ser Ser Ser Gly Thr Leu His Cys
180 185 190

Pro Asp Gln Pro Ser Ser Trp Val Gly Cys Lys Leu Ser Leu Val Phe
195 200 205

Leu Gln Tyr Cys Ile Met Ala Asn Phe Phe Trp Leu Leu Val Glu Gly
210 215 220

Leu Tyr Leu His Thr Leu Leu Val Ala Met Leu Pro Pro Arg Arg Cys
225 230 235 240

Phe Leu Ala Tyr Leu Leu Ile Gly Trp Gly Leu Pro Thr Val Cys Ile
245 250 255

Gly Ala Trp Thr Ala Ala Arg Leu Tyr Leu Glu Asp Thr Gly Cys Trp
260 265 270

Asp Thr Asn Asp His Ser Val Pro Trp Trp Val Ile Arg Ile Pro Ile
275 280 285

Leu Ile Ser Ile Ile Val Asn Phe Val Leu Phe Ile Ser Ile Ile Arg
290 295 300

Ile Leu Leu Gln Lys Leu Thr Ser Pro Asp Val Gly Gly Asn Asp Gln
305 310 315 320

Ser Gln Tyr Lys Arg Leu Ala Lys Ser Thr Leu Leu Leu Ile Pro Leu
325 330 335

Phe Gly Val His Tyr Met Val Phe Ala Val Phe Pro Ile Ser Ile Ser
340 345 350

Ser Lys Tyr Gln Ile Leu Phe Glu Leu Cys Leu Gly Ser Phe Gln Gly
355 360 365

Leu Val Val Ala Val Leu Tyr Cys Phe Leu Asn Ser Glu Val Gln Cys
370 375 380

Glu Leu Lys Arg Lys Trp Arg Ser Arg Cys Pro Thr Pro Ser Ala Ser
385 390 395 400

```
Arg Asp Tyr Arg Val Cys Gly Ser Ser Phe Ser His Asn Gly Ser Glu
                405                 410                 415

Gly Ala Leu Gln Phe His Arg Ala Ser Arg Ala Gln Ser Phe Leu Gln
            420                 425                 430

Thr Glu Thr Ser Val Ile
        435
```

<210> 12
<211> 438
<212> PRT
<213> homo sapiens

<400> 12

```
Met Arg Thr Leu Leu Pro Pro Ala Leu Leu Thr Cys Trp Leu Leu Ala
1               5                   10                  15

Pro Val Asn Ser Ile His Pro Glu Cys Arg Phe His Leu Glu Ile Gln
            20                  25                  30

Glu Glu Glu Thr Lys Cys Ala Glu Leu Leu Arg Ser Gln Thr Glu Lys
        35                  40                  45

His Lys Ala Cys Ser Gly Val Trp Asp Asn Ile Thr Cys Trp Arg Pro
    50                  55                  60

Ala Asn Val Gly Glu Thr Val Thr Val Pro Cys Pro Lys Val Phe Ser
65                  70                  75                  80

Asn Phe Tyr Ser Lys Ala Gly Asn Ile Ser Lys Asn Cys Thr Ser Asp
                85                  90                  95

Gly Trp Ser Glu Thr Phe Pro Asp Phe Val Asp Ala Cys Gly Tyr Ser
            100                 105                 110

Asp Pro Glu Asp Glu Ser Lys Ile Thr Phe Tyr Ile Leu Val Lys Ala
        115                 120                 125

Ile Tyr Thr Leu Gly Tyr Ser Val Ser Leu Met Ser Leu Ala Thr Gly
    130                 135                 140

Ser Ile Ile Leu Cys Leu Phe Arg Lys Leu His Cys Thr Arg Asn Tyr
145                 150                 155                 160

Ile His Leu Asn Leu Phe Leu Ser Phe Ile Leu Arg Ala Ile Ser Val
                165                 170                 175

Leu Val Lys Asp Asp Val Leu Tyr Ser Ser Ser Gly Thr Leu His Cys
            180                 185                 190

Pro Asp Gln Pro Ser Ser Trp Val Gly Cys Lys Leu Ser Leu Val Phe
        195                 200                 205

Leu Gln Tyr Cys Ile Met Ala Asn Phe Phe Trp Leu Leu Val Glu Gly
```

```
    210                 215                 220

Leu Tyr Leu His Thr Leu Leu Val Ala Met Leu Pro Pro Arg Arg Cys
225                 230                 235                 240

Phe Leu Ala Tyr Leu Leu Ile Gly Trp Gly Leu Pro Thr Val Cys Ile
                245                 250                 255

Gly Ala Trp Thr Ala Ala Arg Leu Tyr Leu Glu Asp Thr Gly Cys Trp
            260                 265                 270

Asp Thr Asn Asp His Ser Val Pro Trp Trp Val Ile Arg Ile Pro Ile
        275                 280                 285

Leu Ile Ser Ile Ile Val Asn Phe Val Leu Phe Ile Ser Ile Ile Arg
    290                 295                 300

Ile Leu Leu Gln Lys Leu Thr Ser Pro Asp Val Gly Gly Asn Asp Gln
305                 310                 315                 320

Ser Gln Tyr Lys Arg Leu Ala Lys Ser Thr Leu Leu Leu Ile Pro Leu
                325                 330                 335

Phe Gly Val His Tyr Met Val Phe Ala Val Phe Pro Ile Ser Ile Ser
            340                 345                 350

Ser Lys Tyr Gln Ile Leu Phe Glu Leu Cys Leu Gly Ser Phe Gln Gly
        355                 360                 365

Leu Val Val Ala Val Leu Tyr Cys Phe Leu Asn Ser Glu Val Gln Cys
    370                 375                 380

Glu Leu Lys Arg Lys Trp Arg Ser Arg Cys Pro Thr Pro Ser Ala Ser
385                 390                 395                 400

Arg Asp Tyr Arg Val Cys Gly Ser Ser Phe Ser His Asn Gly Ser Glu
                405                 410                 415

Gly Ala Leu Gln Phe His Arg Ala Ser Arg Ala Gln Ser Phe Leu Gln
            420                 425                 430

Thr Glu Thr Ser Val Ile
        435

<210>  13
<211>  437
<212>  PRT
<213>  mus musculus;

<400>  13

Met Arg Ala Ser Val Val Leu Thr Cys Tyr Cys Trp Leu Leu Val Arg
1                5                  10                  15

Val Ser Ser Ile His Pro Glu Cys Arg Phe His Leu Glu Ile Gln Glu
            20                  25                  30
```

```
Glu Glu Thr Lys Cys Ala Glu Leu Leu Ser Ser Gln Thr Glu Asn Gln
        35                  40                  45

Arg Ala Cys Ser Gly Val Trp Asp Asn Ile Thr Cys Trp Arg Pro Ala
    50                  55                  60

Asp Val Gly Glu Thr Val Thr Val Pro Cys Pro Lys Val Phe Ser Asn
65                  70                  75                  80

Phe Tyr Ser Arg Pro Gly Asn Ile Ser Lys Asn Cys Thr Ser Asp Gly
                85                  90                  95

Trp Ser Glu Thr Phe Pro Asp Phe Ile Asp Ala Cys Gly Tyr Asn Asp
            100                 105                 110

Pro Glu Asp Glu Ser Lys Ile Ser Phe Tyr Ile Leu Val Lys Ala Ile
        115                 120                 125

Tyr Thr Leu Gly Tyr Ser Val Ser Leu Met Ser Leu Thr Thr Gly Ser
    130                 135                 140

Ile Ile Ile Cys Leu Phe Arg Lys Leu His Cys Thr Arg Asn Tyr Ile
145                 150                 155                 160

His Leu Asn Leu Phe Leu Ser Phe Met Leu Arg Ala Ile Ser Val Leu
                165                 170                 175

Val Lys Asp Ser Val Leu Tyr Ser Ser Ser Gly Leu Leu Arg Cys His
            180                 185                 190

Asp Gln Pro Ala Ser Trp Val Gly Cys Lys Leu Ser Leu Val Phe Phe
        195                 200                 205

Gln Tyr Cys Ile Met Ala Asn Phe Tyr Trp Leu Leu Val Glu Gly Leu
    210                 215                 220

Tyr Leu His Thr Leu Leu Val Ala Ile Leu Pro Pro Ser Arg Cys Phe
225                 230                 235                 240

Leu Ala Tyr Leu Leu Ile Gly Trp Gly Ile Pro Ser Val Cys Ile Gly
                245                 250                 255

Ala Trp Thr Ala Thr Arg Leu Ser Leu Glu Asp Thr Gly Cys Trp Asp
            260                 265                 270

Thr Asn Asp His Ser Ile Pro Trp Trp Val Ile Arg Met Pro Ile Leu
        275                 280                 285

Ile Ser Ile Val Val Asn Phe Ala Leu Phe Ile Ser Ile Val Arg Ile
    290                 295                 300

Leu Leu Gln Lys Leu Thr Ser Pro Asp Val Gly Gly Asn Asp Gln Ser
305                 310                 315                 320

Gln Tyr Lys Arg Leu Ala Lys Ser Thr Leu Leu Leu Ile Pro Leu Phe
                325                 330                 335
```

Gly Val His Tyr Met Val Phe Ala Ala Phe Pro Ile Gly Ile Ser Ser
340 345 350

Thr Tyr Gln Ile Leu Phe Glu Leu Cys Val Gly Ser Phe Gln Gly Leu
355 360 365

Val Val Ala Val Leu Tyr Cys Phe Leu Asn Ser Glu Val Gln Cys Glu
370 375 380

Leu Lys Arg Arg Trp Arg Gly Leu Cys Leu Thr Gln Ala Gly Ser Arg
385 390 395 400

Asp Tyr Arg Leu His Ser Trp Ser Met Ser Arg Asn Gly Ser Glu Ser
405 410 415

Ala Leu Gln Ile His Arg Gly Ser Arg Thr Gln Ser Phe Leu Gln Ser
420 425 430

Glu Thr Ser Val Ile
435

<210> 14
<211> 437
<212> PRT
<213> rattus norvegicus;

<400> 14

Met Arg Ala Ser Val Val Leu Thr Cys Tyr Cys Trp Leu Leu Val Arg
1 5 10 15

Val Ser Ser Ile His Pro Glu Cys Arg Phe His Leu Glu Ile Gln Glu
20 25 30

Glu Glu Thr Lys Cys Ala Glu Leu Leu Ser Ser Gln Met Glu Asn His
35 40 45

Arg Ala Cys Ser Gly Val Trp Asp Asn Ile Thr Cys Trp Arg Pro Ala
50 55 60

Asp Ile Gly Glu Thr Val Thr Val Pro Cys Pro Lys Val Phe Ser Asn
65 70 75 80

Phe Tyr Ser Arg Pro Gly Asn Ile Ser Lys Asn Cys Thr Ser Asp Gly
85 90 95

Trp Ser Glu Thr Phe Pro Asp Phe Ile Asp Ala Cys Gly Tyr Asn Asp
100 105 110

Pro Glu Asp Glu Ser Lys Ile Thr Phe Tyr Ile Leu Val Lys Ala Ile
115 120 125

Tyr Thr Leu Gly Tyr Ser Val Ser Leu Met Ser Leu Thr Thr Gly Ser
130 135 140

Ile Ile Ile Cys Leu Phe Arg Lys Leu His Cys Thr Arg Asn Tyr Ile
145 150 155 160

```
His Leu Asn Leu Phe Leu Ser Phe Met Leu Arg Ala Ile Ser Val Leu
                165                 170                 175

Val Lys Asp Ser Val Leu Tyr Ser Ser Ser Gly Thr Leu Arg Cys His
            180                 185                 190

Asp Gln Pro Gly Ser Trp Val Gly Cys Lys Leu Ser Leu Val Phe Phe
        195                 200                 205

Gln Tyr Cys Ile Met Ala Asn Phe Tyr Trp Leu Leu Val Glu Gly Leu
    210                 215                 220

Tyr Leu His Thr Leu Leu Val Ala Ile Leu Pro Pro Ser Arg Cys Phe
225                 230                 235                 240

Leu Ala Tyr Leu Leu Ile Gly Trp Gly Ile Pro Ser Val Cys Ile Gly
                245                 250                 255

Ala Trp Ile Ala Thr Arg Leu Ser Leu Glu Asp Thr Gly Cys Trp Asp
            260                 265                 270

Thr Asn Asp His Ser Ile Pro Trp Trp Val Ile Arg Met Pro Ile Leu
        275                 280                 285

Ile Ser Ile Val Val Asn Phe Ala Leu Phe Ile Ser Ile Val Arg Ile
    290                 295                 300

Leu Leu Gln Lys Leu Thr Ser Pro Asp Val Gly Gly Asn Asp Gln Ser
305                 310                 315                 320

Gln Tyr Lys Arg Leu Ala Lys Ser Thr Leu Leu Leu Ile Pro Leu Phe
                325                 330                 335

Gly Val His Tyr Met Val Phe Ala Ala Phe Pro Ile Gly Ile Ser Ser
            340                 345                 350

Thr Tyr Gln Ile Leu Phe Glu Leu Cys Val Gly Ser Phe Gln Gly Leu
        355                 360                 365

Val Val Ala Val Leu Tyr Cys Phe Leu Asn Ser Glu Val Gln Cys Glu
    370                 375                 380

Leu Lys Arg Arg Trp Arg Gly Leu Cys Leu Thr Gln Pro Gly Ser Arg
385                 390                 395                 400

Asp Tyr Arg Leu His Ser Trp Ser Met Ser Arg Asn Gly Ser Glu Ser
                405                 410                 415

Ala Leu Gln Ile His Arg Gly Ser Arg Thr Gln Ser Phe Leu Gln Ser
            420                 425                 430

Glu Thr Ser Val Ile
        435
```

<210> 15
<211> 437

<212> PRT
<213> rattus norvegicus;

<400> 15

```
Met Arg Ala Ser Val Val Leu Thr Cys Tyr Cys Trp Leu Leu Val Arg
1               5                  10                  15

Val Ser Ser Ile His Pro Glu Cys Arg Phe His Leu Glu Ile Gln Glu
            20                  25                  30

Glu Glu Thr Lys Cys Ala Glu Leu Leu Ser Ser Gln Met Glu Asn His
        35                  40                  45

Arg Ala Cys Ser Gly Val Trp Asp Asn Ile Thr Cys Trp Arg Pro Ala
    50                  55                  60

Asp Ile Gly Glu Thr Val Thr Val Pro Cys Pro Lys Val Phe Ser Asn
65                  70                  75                  80

Phe Tyr Ser Arg Pro Gly Asn Ile Ser Lys Asn Cys Thr Ser Asp Gly
                85                  90                  95

Trp Ser Glu Thr Phe Pro Asp Phe Ile Asp Ala Cys Gly Tyr Asn Asp
            100                 105                 110

Pro Glu Asp Glu Ser Lys Ile Thr Phe Tyr Ile Leu Val Lys Ala Ile
        115                 120                 125

Tyr Thr Leu Gly Tyr Ser Val Ser Leu Met Ser Leu Thr Thr Gly Ser
    130                 135                 140

Ile Ile Ile Cys Leu Phe Arg Lys Leu His Cys Thr Arg Asn Tyr Ile
145                 150                 155                 160

His Leu Asn Leu Phe Leu Ser Phe Met Leu Arg Ala Ile Ser Val Leu
                165                 170                 175

Val Lys Asp Ser Val Leu Tyr Ser Ser Ser Gly Thr Leu Arg Cys His
            180                 185                 190

Asp Gln Pro Gly Ser Trp Val Gly Cys Lys Leu Ser Leu Val Phe Phe
        195                 200                 205

Gln Tyr Cys Ile Met Ala Asn Phe Tyr Trp Leu Leu Val Glu Gly Leu
    210                 215                 220

Tyr Leu His Thr Leu Leu Val Ala Ile Leu Pro Pro Ser Arg Cys Phe
225                 230                 235                 240

Leu Ala Tyr Leu Leu Ile Gly Trp Gly Ile Pro Ser Val Cys Ile Gly
                245                 250                 255

Ala Trp Ile Ala Thr Arg Leu Ser Leu Glu Asp Thr Gly Cys Trp Asp
            260                 265                 270

Thr Asn Asp His Ser Ile Pro Trp Trp Val Ile Arg Met Pro Ile Leu
```

```
        275                 280                 285

Ile Ser Ile Val Val Asn Phe Ala Leu Phe Ile Ser Ile Val Arg Ile
    290                 295                 300

Leu Leu Gln Lys Leu Thr Ser Pro Asp Val Gly Gly Asn Asp Gln Ser
305                 310                 315                 320

Gln Tyr Lys Arg Leu Ala Lys Ser Thr Leu Leu Leu Ile Pro Leu Phe
                325                 330                 335

Gly Val His Tyr Met Val Phe Ala Ala Phe Pro Ile Gly Ile Ser Ser
            340                 345                 350

Thr Tyr Gln Ile Leu Phe Glu Leu Cys Val Gly Ser Phe Gln Gly Leu
        355                 360                 365

Val Val Ala Val Leu Tyr Cys Phe Leu Asn Ser Glu Val Gln Arg Glu
    370                 375                 380

Leu Lys Arg Arg Trp Arg Gly Leu Cys Leu Thr Gln Pro Gly Ser Arg
385                 390                 395                 400

Asp Tyr Arg Leu His Ser Trp Ser Met Ser Arg Asn Gly Ser Glu Ser
                405                 410                 415

Ala Leu Gln Ile His Arg Gly Ser Arg Thr Gln Ser Phe Leu Gln Ser
            420                 425                 430

Glu Thr Ser Val Ile
        435

<210>  16
<211>  437
<212>  PRT
<213>  rat;

<400>  16

Met Arg Ala Ser Val Val Leu Thr Cys Tyr Cys Trp Leu Leu Val Arg
1               5                   10                  15

Val Ser Ser Ile His Pro Glu Cys Arg Phe His Leu Glu Ile Gln Glu
            20                  25                  30

Glu Glu Thr Lys Cys Ala Glu Leu Leu Ser Ser Gln Met Glu Asn His
        35                  40                  45

Arg Ala Cys Ser Gly Val Trp Asp Asn Ile Thr Cys Trp Arg Pro Ala
    50                  55                  60

Asp Ile Gly Glu Thr Val Thr Val Pro Cys Pro Lys Val Phe Ser Asn
65                  70                  75                  80

Phe Tyr Ser Arg Pro Gly Asn Ile Ser Lys Asn Cys Thr Ser Asp Gly
                85                  90                  95
```

Trp Ser Glu Thr Phe Pro Asp Phe Ile Asp Ala Cys Gly Tyr Asn Asp
100 105 110

Pro Glu Asp Glu Ser Lys Ile Thr Phe Tyr Ile Leu Val Lys Ala Ile
115 120 125

Tyr Thr Leu Gly Tyr Ser Val Ser Leu Met Ser Leu Thr Thr Gly Ser
130 135 140

Ile Ile Ile Cys Leu Phe Arg Lys Leu His Cys Thr Arg Asn Tyr Ile
145 150 155 160

His Leu Asn Leu Phe Leu Ser Phe Met Leu Arg Ala Ile Ser Val Leu
165 170 175

Val Lys Asp Ser Val Leu Tyr Ser Ser Ser Gly Thr Leu Arg Cys His
180 185 190

Asp Gln Pro Gly Ser Trp Val Gly Cys Lys Leu Ser Leu Val Phe Phe
195 200 205

Gln Tyr Cys Ile Met Ala Asn Phe Tyr Trp Leu Leu Val Glu Gly Leu
210 215 220

Tyr Leu His Thr Leu Leu Val Ala Ile Leu Pro Pro Ser Arg Cys Phe
225 230 235 240

Leu Ala Tyr Leu Leu Ile Gly Trp Gly Ile Pro Ser Val Cys Ile Gly
245 250 255

Ala Trp Ile Ala Thr Arg Leu Ser Leu Glu Asp Thr Gly Cys Trp Asp
260 265 270

Thr Asn Asp His Ser Ile Pro Trp Trp Val Ile Arg Met Pro Ile Leu
275 280 285

Ile Ser Ile Val Val Asn Phe Ala Leu Phe Ile Ser Ile Val Arg Ile
290 295 300

Leu Leu Gln Lys Leu Thr Ser Pro Asp Val Gly Gly Asn Asp Gln Ser
305 310 315 320

Gln Tyr Lys Arg Leu Ala Lys Ser Thr Leu Leu Leu Ile Pro Leu Phe
325 330 335

Gly Val His Tyr Met Val Phe Ala Ala Phe Pro Ile Gly Ile Ser Ser
340 345 350

Thr Tyr Gln Ile Leu Phe Glu Leu Cys Val Gly Ser Phe Gln Gly Leu
355 360 365

Val Val Ala Val Leu Tyr Cys Phe Leu Asn Ser Glu Val Gln Cys Glu
370 375 380

Leu Lys Arg Arg Trp Arg Gly Leu Cys Leu Thr Gln Pro Gly Ser Arg
385 390 395 400

Asp Tyr Arg Leu His Ser Trp Ser Met Ser Arg Asn Gly Ser Glu Ser
405 410 415

Ala Leu Gln Ile His Arg Gly Ser Arg Thr Gln Ser Phe Leu Gln Ser
420 425 430

Glu Thr Ser Val Ile
435